

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000115**Date Inspected:** 04-Apr-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

<b>CWI Name:</b>	Zhou Daging			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	N/A		

**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector, Alfredo Acuna was present for the welder and welding operator qualification tests scheduled for this project. Moody International representative, Zhou Daging and assistances were observed by the QA inspector performing verifications of the welding parameters, amperages, voltages, travel speeds, preheat and interpass temperatures for the welder qualification tests as follows:

Flux Cored Arc Welding: ZPMC welders, Liu Miao, Yu Juan, Sun Gui Hua, Bao Zheng Nan, Li Xue Hua, Liu Guan Quan, Xiang Jie, Wang Xing Guo and Yang Cai Feng were observed by the QA Inspector performing welder qualification test plates 2007-0403-117, 118, 119, 120, 121, 122, 123, 124 and 125 respectively using the semi-automatic flux cored arc welding gas (FCAW-G) process in the vertical (3G) position with the 1.4 mm diameter Supercore 71-H electrode following the welding procedure specification WPS-B-T-2233-B-U2a-F on the 26 mm thick, fracture critical test plates. The root opening of the joint was approximately 6 mm. The QA Inspector performed random verifications amperages, voltages, travel speeds, preheat and interpass temperatures after Moody International verifications. The QA observed that the welding appeared to be in compliance with contract documents.

Submerged Arc Welding: ZPMC, welder operators Li Guang Xing and Gu Cai Hong were observed by the QA Inspector performing welding operator qualification test plates 2007-0403-004 and 005 respectively using the automated submerged arc welding (SAW) process single electrode in the flat (1G) position with the 4.8 mm diameter JW-3 electrode following the welding procedure specification WPS-B-T-2221-1-FB on the 26 mm thick fracture critical test plates. The root opening of the joint was approximately 16 mm. The QA Inspector performed random verifications amperages, voltages, travel speeds, preheat and interpass temperatures after Moody International verifications. The QA inspectors recorded that the welding parameters appeared to be in compliance with contract documents.

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Shielded Metal Arc Welding: ZPMC, welders, Yun Cheng Xian, Zhong Zhao Jun, Mao Li Wei were observed by the QA Inspector performing welder qualification test plates 2007-0403-075, 076 and 077 respectively, using the shielded metal arc welding (SMAW) process in the vertical (3G) position with the 4.0 mm diameter TL-508 electrode following the welding procedure specification WPS-B-T-2213-B-U2a-F on the 26 mm thick fracture critical test plates. The root opening of the joint was approximately 6 mm. The QA Inspector performed random verifications amperages, voltages, travel speeds, preheat and heat interpass temperatures after Moody International verifications. The QA inspectors recorded that the welding parameters appeared to be in compliance with contract documents.

### Summary of Conversations:

The QA inspector had a conversation with American Bridge/Flour Enterprises, a JV (ABF) representative Weimin Song. Mr. Song relayed to the QA inspector that the Moody International had 54% rejection rate on 04/03/07 and 65% rejection rate on 04/04/07. A total of 44 welders were tested on 07-04-03 and 24 welders failed the test (FCAW-8,SAW-0 and SMAW-16). A total of 22 welders were tested on 07-04-04 and 14 welders failed the test(FCAW-13, SAW- 0 and SMAW-1).

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Acuna,Alfredo	Quality Assurance Inspector
<b>Reviewed By:</b>	McClary,David	QA Reviewer

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